

F. G. DANIELS.
Door-Bell.

No. 167,508.

Patented Sept. 7, 1875.

Fig. 1.

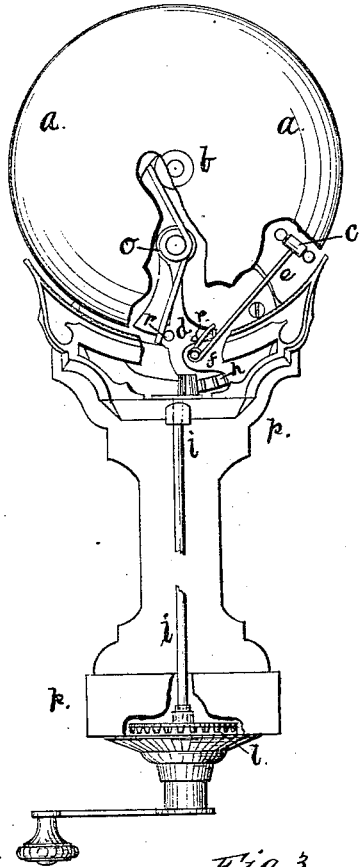


Fig. 2.

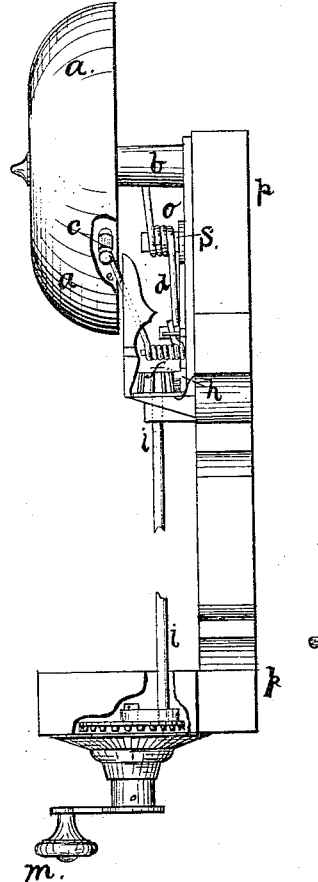


Fig. 3.

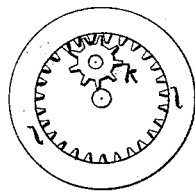


Fig. 4.



WITNESSES:
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UNITED STATES PATENT OFFICE.

FREDERIC G. DANIELS, OF PAWTUCKET, RHODE ISLAND.

IMPROVEMENT IN DOOR-BELLS.

Specification forming part of Letters Patent No. 167,508, dated September 7, 1875; application filed February 23, 1875.

To all whom it may concern:

Be it known that I, FREDERIC G. DANIELS, of Pawtucket, in the county of Providence and State of Rhode Island, have invented certain Improvements in Door-Bells and bells for other purposes, of which the following is a specification:

My said invention relates to an effective and simple means for operating the hammer or tongue of the bell; and consists of an escapement with the hammer attached thereto, the action of which is governed and regulated by springs, and which is operated upon by an intermittent gear connected with an exterior crank or handle.

The accompanying drawing is hereby made a part of this specification.

Figure 1 is a front view of the device; and Fig. 2, a side view of the same, certain exterior parts being torn away in both figures to show the interior mechanism. Fig. 3 is a detached view of a larger and smaller gearing connected with the handle, and hereinafter called, respectively, *l* and *k*. Fig. 4 is a similar detached view of the intermittent or mangled gear *h*, hereinafter described.

a is the bell, screwed onto an arm, *b*, which projects from the frame-work of the device, and *c* is the hammer or tongue. This hammer is connected with the escapement *d* by means of the arm *e* and intermediate spring *f*. At the lower part of the escapement *d* is the toothed rack, which connects with the intermittent gear *h* at the top of the upright rod *i*. This rod, or stiff wire, connects said intermittent gear with the small gear *k* at the bottom of said rod *i*, and this small gear is operated by the large gear *l*, connected with the crank or handle *m*.

The rigid spring *o* causes a swift return of the escapement *d* after the disconnection of said toothed rack from the mangled or intermittent gear *h*, and produces a sharp and strong stroke of the connected hammer against the bell *a*.

p p show the frame-work of the device, and *r r* are pins or shoulders, which serve to keep the springs *f* and *o* in proper position.

The operation of said device is substantially as follows: The turning of the crank *m* revolves the perpendicular rod *i* through the connection of the larger gear *l* with the smaller gear *k*. The revolution of said rod *i* operates the intermittent gear *h* and toothed rack aforesaid, and thereby causes the vibratory motion of the escapement *d*, as the latter is secured to the frame-work only by the pivot *s*. Underneath the collar or plate *n* is a ratchet-wheel and pawl, which prevent the crank *m* and its connections from being turned backward or in the wrong direction.

The relative sizes of the gears *k l* are such that the rod *i* revolves three times while the handle *m* is once revolved, thus producing three strokes of the hammer upon the bell each time said handle is turned around. These sizes of said gears *k l* may be so modified as to produce more or fewer strokes of the hammer on the bell at each revolution of said crank, if desired.

The bell may be set in any desired place, and at any distance from the handle or crank, by lengthening the rod *i*; and as many corners may be turned as are found desirable by using common gearing at each of said corners for the connection of each necessary length of said rod, and for the transmission through them all of the necessary circular motion to operate the mangled or intermittent gear *h* and escapement *d*.

I claim—

The combination of the revolving rod *i*, escapement *d*, hammer and rod *c e*, spring *o*, and intermittent or mangled gear *h*, substantially in the manner and for the purposes described.

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Witnesses:

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